



MassDEP / Drinking Water Program

100 Cambridge Street – 9th Floor; Boston, MA 02114

Program.Director-DWP@mass.gov or 617-292-5770

In The Main - The Drinking Water Updates can be found online at:

mass.gov/lists/communication-to-public-water-suppliers or at the Statehouse Archives at: <https://archives.lib.state.ma.us/handle/2452/826119> which has a searchable database.



Merrimack River, Lawrence, MA Photo by: [Terageorge--commonswiki](#)

This *In The Main* newsletter has these topics of interest

2023-05-05

1. Community Water Fluoridation Educational Information
2. Reminder: Report Fish Kills at Drinking Water Reservoirs and Tributaries
3. Getting Ready for the LCRR
4. Lead in Schools and Childcare Facilities Drinking Water Update
5. Radionuclide Rule Treatment Steps Refresher
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Community Water Fluoridation Educational Information

Community water fluoridation improves oral health and provides many other benefits including on average fewer cavities, leading to less pain, less fillings and tooth removal and less missed days from school or work or enjoying regular activities. Benefits also include a return of approximately \$20 for every \$1 invested as a result of less expensive dental treatment needed. Please see the Centers for Disease Control (CDC) poster on the communities benefits from water fluoridation at (<https://www.cdc.gov/oralhealth/infographics/community-water-fluoridation.html>) . You may download this poster for sharing with your consumers.



Reliable Sources for Information About Fluoride:

Massachusetts Department of Public Health:	
Statement on Community Water Fluoridation	https://www.mass.gov/orgs/office-of-oral-health
Community Water Fluoridation Resources	https://www.mass.gov/community-water-fluoridation-resources

Centers for Disease Control and Prevention:	
Community Water Fluoridation	https://www.cdc.gov/fluoridation/index.html

National Institute of Health	
National Cancer Institute: Fluoridated Water	https://www.cancer.gov/about-cancer/causes-prevention/risk/myths/fluoridated-water-fact-sheet

American Dental Association:	
Fluoridation FAQs	https://www.ada.org/resources/community-initiatives/fluoride-in-water/fluoridation-faqs
Fluoridation Facts	https://www.ada.org/resources/community-initiatives/fluoride-in-water/fluoridation-facts

American Academy of Pediatric Dentistry:	
Campaign for Dental Health	https://ilikemyteeth.org/

Reminder: Report Fish Kills at Drinking Water Reservoirs and Tributaries

Report a Fish Kill

If you observe dead fish, contact the Massachusetts Environmental Police's 24-hour radio room at 1-800-632-8075. A MassWildlife biologist will review each situation to determine whether the kill is natural or requires a site investigation.

Spring and Summer Fish Kills

As temperatures increase, the water cannot hold as much oxygen as when it was cold. Aquatic plants also increase their oxygen consumption. In turn, oxygen levels in shallow, weedy ponds decrease. If levels fall below that required for fish to survive, it can become critical. Late spring and early summer are when most warmwater fish species begin to spawn. Large numbers of these species crowd in the shallow waters along the shore vying for the best spawning sites. These crowded areas are susceptible to disease outbreaks. The result is an unavoidable natural fish kill, usually consisting of one or two species of fish. This is a natural occurrence and does not pose a public health risk.

During the long hot days of summer, oxygen levels in shallow, weedy ponds can further decline as aquatic plants consume oxygen at night resulting in low oxygen levels in the early hours of the morning. This situation can become critical if the levels fall below that required for fish to survive.

MassWildlife's Response to Fish Kills

A MassWildlife fisheries biologist will review a report of a fish kill and make a determination about whether the kill is natural or requires a site investigation. Generally, pollution impacts all kinds of aquatic life, therefore the most important piece of evidence for the biologist is knowing the number of fish species associated with the fish kill. Fish kills in which only one or two species are involved are almost always a natural event.

When it is likely a fish kill is due to pollution, MassWildlife notifies the appropriate state agency which takes the lead on a formal investigation, including analysis of water and fish samples to determine the source of pollution.

MassWildlife provides the investigating agency with technical assistance by identifying the kinds and numbers of fish involved.

For More Information

Go to MassWildlife's web page for reporting fish kills at <https://www.mass.gov/how-to/if-you-find-a-fish-kill>

Getting Ready for the LCRR

This week, Community and Non Transient Non Community PWS received a letter from MassDEP that outlines the Lead and Copper Rule program updates as a result of the recent EPA LCR National Enforcement and Compliance Initiative (NECI) inspections. A copy of the notification letter is located at <https://www.mass.gov/media/2588811/>.

The major updates include the following:

- 1. LCR Sampling Sites and Sampling Plan Form Update**

The revised form (LCR-LOC-MOD) allows for verification of sampling sites to ensure PWSs are using updated information including updated material evaluations. This form will be effective starting July 1st, 2023. A training about this form will be held on May 17, 2023. We encourage PWSs to begin working with the updated format as soon as you have reviewed the training materials in order to start using the form by July 1st. See training information below:

LCR Sampling Site and Sampling Plan Form Update Training.

A video training on this form is available at <https://youtu.be/hJd9MAY8CGA>.

In addition, a webinar using the video training will be held on May 17, 2023 from 10 a.m. to 11 a.m. Please register at https://uso6web.zoom.us/meeting/register/tZMucipqTlpH9RfLh4_qS-elHKeKTfw7JS-

Training Agenda

0.5 TCHs

Introduction/Overview

LCR sampling plan and sampling change request form updates

LCR sampling plan and change form - video training

Q&A

Adjourn

- 2. Consumer Notices, Public Notice and Public Education Certification Form Updates**

The Certification forms for Consumer Notices, Public Notice and Public Education have been updated to remind PWS of the federal and state record keeping requirements. All LCR records are required to be maintained for 12 years. See updated forms at <https://www.mass.gov/lists/lead-copper-forms-templates>.

- 3. LCR Compliance Sampling Program Homeowner Results Form Update**

A date field was added to the form to capture the notification date of the LCR sample results taken at households. This form is located at <https://www.mass.gov/doc/lcr-compliance-sampling-program-homeowner-results/>.

4. Survey PWS with Lead ALE

After an LCR ALE, DWP will send the PWS a LCR Capacity and Compliance questionnaire on actions the PWS is or may be taking to stay in compliance for the foreseeable future. The purpose of the survey is to collect information on the PWS plans and needs and connect the PWS with appropriate technical assistance (TA) to ensure the system will be prepared for the LCRR and is taking advantage of any available technical assistance and funding to improve its capacity.

5. Outreach Tool Kit for Crowdsourcing App

For systems already using the Crowdsourcing App, the DWP developed an outreach toolkit where you can find ready-to-use social media posts with images, postcards, and informational infographics. The toolkit is located at <https://www.mass.gov/doc/lcrr-service-line-inventory-public-outreach-toolkit/>. Please remember to sign in to use the crowdsourcing application following the instructions located at [ma-lsli-app-instructions.pdf](https://www.mass.gov/doc/ma-lsli-app-instructions.pdf) | [Mass.gov](https://www.mass.gov).

6. Certification form for approval for PWS that claim no LSL, galvanized requiring replacement (GRR) or unknown service lines

To start preparing for the LCRR, the DWP has developed a certification form for PWS without LSLs, GRR or unknown service lines. If a PWS can demonstrate and certify that it has no LSLs, no GRRs and no service lines of unknown material, the PWS may complete and submit the LCRR-NONLSL-CERT form to MassDEP for review and approval. The form is located at <https://www.mass.gov/media/2588731/>. If the LCRR-NONLSL-CERT is approved by MassDEP the PWS will not be required to make the inventory publicly accessible on-line and provide routine inventory updates to the State or to the public. However, the PWS will still be required to post a statement NO LSL Statement in the CCR as applicable.

You can find the NO LSL Statement template at <https://www.mass.gov/doc/lcrr-no-lead-service-lines-statement-template/>.

7. Guide on initial LCRR monitoring for PWS on current LCR reduced monitoring

Under the LCRR, PWS will need to start standard LCRR sampling in 2025. If your system is currently on reduced monitoring, please see the LCRR Initial Monitoring Guide located at <https://www.mass.gov/doc/monitoring-frequency-guide-for-systems-subject-to-the-lcrr/> to determine if your PWS is eligible to continue on a reduced schedule.

If you have any questions on this information, please review the training video and attend the training noted in the information above or contact the Drinking Water Program at program.director-dwp@mass.gov.

Lead in Schools and Childcare Facilities Drinking Water Update

Lead in Schools and Early Education and Care Facilities (EECF) Drinking Water Expanded Assistance Program

The Expanded Assistance Program for Lead in Schools and Early Education and Care Facilities (EECF) Drinking Water provides free analysis of lead drinking water samples and technical assistance to schools and EECFs by assisting with sampling, results interpretation, and guidance on remediation actions.

Currently, 513 schools and EECFs are participating in the program and 310 (60%) of participating facilities are within environmental justice communities. To date, 370 schools and EECFs have completed testing. Of facilities that have tested and received results, 250 (68%) had one or more lead detections.

Do you know of any schools or childcare facilities that could benefit from this program? Please identify and encourage schools and childcares within your service area to participate in the program.

Eligible facilities may apply for assistance at https://script.google.com/macros/s/AKfycbyr_U8wEMrA-Q2XifkK4l58x4GDtYrltvpKIKUAhSxpw9pSZtA/exec

For additional information on the program see <https://www.mass.gov/service-details/technical-assistance-for-lead-in-school-and-child-care-center-drinking-water> or contact program.director-dwp@mass.gov, subject line Lead in Schools Program.



Getting Ready for the LCRR - School and EECF Sampling Provisions

The EPA's Lead and Copper Rule Revisions (LCRR) include several requirements for community PWS as it relates to communication and testing for lead in schools and EECFs. MassDEP is drafting regulations that will be no less stringent than the federal requirement. Per [40 CFR §141.92](#) of the LCRR, beginning on October 16, 2024:

- All COM PWS must conduct directed public education and lead monitoring at the schools and EECFs they serve if those schools or EECFs were constructed prior to January 1, 2014 or the date the State adopted standards that meet the definition of lead free in accordance with Section 1417 of the Safe Drinking Water Act, as amended by the Reduction of Lead in Drinking Water Act, whichever is earlier. These requirements do not apply to schools that are PWS.
- PWS must conduct lead sampling at elementary schools and EECFs they serve once and on request of the facility thereafter. PWS shall also conduct lead sampling at secondary schools they serve on request.
- PWS must collect samples from at least 20 percent of elementary schools served and 20 percent of EECFs served per year until all schools and EECFs have been sampled or have declined to participate. A refusal or non-response may count as part of the minimum 20 percent per year. The PWS must make two good faith efforts to contact the schools and EECFs with the offer of sampling.
- All elementary schools and EECFs must be sampled at least once in the five years following October 16, 2024.
- PWS must take five samples per school and two samples per EECF at outlets typically used for consumption.
- PWS may apply for and receive a waiver from these provisions if mandatory sampling for lead in drinking water is conducted for schools and EECFs served by the PWS due to State or local law or program. The sampling program must be consistent with the requirements of [40 CFR 141.92\(d\)](#) to receive the waiver. PWS may also apply for a partial waiver if their sampling program covers a subset of schools or EECFs, for example public schools.

Six PWS are actively participating in a Pilot Program through the Expanded Assistance Program to offer to test schools and childcare facilities in their service area prior to the implementation of these LCRR requirements. To date, 21 facilities identified by PWS for testing have been sampled with results.

Note: EPA is currently working on the Lead and Copper Rule Improvements (LCRI) with the intent to strengthen the Lead and Copper Rule. These new regulations may include changes to school and EECF requirements. MassDEP will update you when more is known.

Is your PWS prepared for the upcoming LCRR school and EECF outreach and monitoring requirements? Contact the MassDEP Drinking Water Program at program.director-dwp@mass.gov, subject line LCRR, with any questions.

Radionuclide Rule Treatment Steps Refresher

Radionuclide monitoring is required by 310 CMR 22.09A. The five radionuclides required to be tested include beta particle and photon radioactivity, gross alpha radiation, radium 226 and 228, radon-222, and uranium. Public water suppliers (PWSs) may encounter levels of radionuclides in their sources that exceed drinking water standards. In order to determine the levels of radionuclides, PWSs sampling in accordance with the regulations and their sampling schedules need to collect a sample of the water from the entrance point to the distribution system and send it to a lab certified by MassDEP to perform the analysis. A list of certified labs can be found online at [Find a Certified Laboratory for Water Testing | Mass.gov](#).

Note that test results are due to MassDEP by the 10th of the month following the quarter for which the monitoring was required (January 10th, April 10th, July 10th, and October 10th). Accordingly, **PWSs should submit samples to their labs early enough in the quarter to allow for typical radionuclide turnaround times.** Missing the deadline is a reporting violation and MassDEP will take enforcement action.

Treatment for radionuclides usually involves ion exchange (resin) technology. Radon treatment is best accomplished with granular activated carbon (GAC) or by air stripping. It is required to have a qualified engineer or individual design these types of systems and a MassDEP certified operator is required to operate and maintain the system. Here are things to consider:

- If the gross alpha result is equal to or greater than 5 pCi/L then testing for radium 226 and radium 228 should be requested of the laboratory. If the gross alpha result is equal to or greater than 15 pCi/L then testing for uranium should also be requested. Report the result to your regional MassDEP office. If an MCL has been exceeded, follow the guidance provided by that office.
- Know your detailed water quality. Are there any other elements in the water (example: iron, manganese, arsenic...) which will compete for the treatment sites? This will help determine proper treatment for the source.
- How much water flows through the treatment system, and at what concentration is the radium and other elements? They all add up. It is important to change out the filter media before you have break through, or before the filter media becomes a low-level radioactive waste, whichever comes first. Persons producing or possessing residuals or sludge resulting from the treatment of water or sewage and containing naturally occurring radium from groundwater are exempt from licensure provided they contain a combined radium (radium-226 and radium-228) concentration less than or equal to **200 pCi/g** (picocuries per gram, dry weight basis). You may be interested in the information from Illinois Emergency Management Agency at <https://iemaohs.illinois.gov/>. The levels and handling of uranium treatment residuals will vary from this guidance regarding discharge and transportation limits.
- It is best to have the treatment system away from frequented areas as it will be collecting radionuclides. Areas near corridors or where people may frequent, even if a wall separates people, need to be assessed to provide adequate protection from potential levels of radiation emitted.
- See if the manufacturer of the treatment resin will allow the used resin to be shipped back and a new one sent in exchange. Make sure you can put a new resin cartridge in while the old is being sent back. Have a backup one on hand. Otherwise have a disposal plan.
- Resin regeneration is possible, but the rinse water will need to be disposed of. This requires a knowledgeable operator and needs to be part of the Operation and Maintenance Plan (O&M). Identify the disposal site and if additional permitting is needed.
- Have a testing plan and O&M on file onsite and approved by the regional MassDEP office.

Below is a table of Massachusetts maximum contaminant levels for radionuclides. If you have any questions, contact program.director-dwp@mass.gov.

Massachusetts Maximum Contaminant Levels – Radionuclides

Radionuclides			
Substance	CASRN	Type of Guidance	MMCL
Beta particle and photon radioactivity	N/A	MMCL	concentration which produces an annual dose of 4 millirem/yr
Gross alpha radiation ^[11]	N/A	MMCL	15 pCi/L
Radium 226 & 228	7440144	MMCL	5 pCi/L
Radon-222 ^[12]	14859677	ORSG	10,000 pCi/L (ORSG)
Uranium	7440611	MMCL	0.030 mg/L

[11] If the gross alpha result is equal to or greater than 5 pCi/L then testing for radium 226 and radium 228 should be requested of the laboratory. If the gross alpha result is equal to or greater than 15 pCi/L then testing for uranium should also be requested.

[12] Exceedance of this guideline indicates that indoor air sampling for Radon-222 should be done. US EPA proposed MCLs for radon (64 FR 211; Tuesday, November 2, 1999) which have not been finalized.

Additional Resources for Massachusetts Maximum Contaminant Levels – Radionuclides:

[Uranium Activity to Mass Conversion Factor Guideline for Use in Drinking Water Compliance Monitoring and Risk Assessment](#) (PDF 30.05 KB)

Table from [Drinking Water Standards and Guidelines | Mass.gov](#)

Helpful references:

[Drinking Water Standards and Guidelines | Mass.gov](#)

[FAQs: Radionuclides | Mass.gov](#)

[Find a Certified Laboratory for Water Testing | Mass.gov](#)

PFAS Update

Proposed Federal MCLs

On May 4th, the USEPA held a public hearing on the [proposed National Primary Drinking Water Rule](#) to establish Maximum Contaminant Levels (MCLs) for PFOS and PFOA, and to regulate 4 other PFAS: GenX, PFBS, PFNA, and PFHxS as a mixture using a Hazard Index MCL. The public comment period ends May 30th. Comments on the regulations are due to EPA on May 30, 2023. See <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>. The regulations are expected to be finalized by the end of the year. The proposed MCLs are:

PFAS	Maximum Contaminant Level Goal	Maximum Contaminant Level
PFOA	0	4.0 ppt
PFOS	0	4.0 ppt
PFBS	1.0 (unitless) Hazard Index	1.0 (unitless) Hazard Index
PFNA		
GenX (HFPO-DA)		
PFHxS		

Estimated potential impact of the proposed MCLs on Massachusetts Community (COM) and Non-Transient Non-Community Systems (NTNC) PWS

Based on the most recent sampling, approximately 198 COM and NTNC PWS will be impacted by the draft EPA MCL if it became final. Forty-nine of these impacted systems are already working with MassDEP to address PFAS levels and 149 systems will have to address PFAS for the first time. MassDEP/DWP will be contacting each potentially impacted PWS.

Fifth Unregulated Contaminant Monitoring Rule (UCMR5)

The Safe Drinking Water Act (SDWA) requires that once every five years EPA issue a list of unregulated contaminants to be monitored by public water systems (PWSs).

[UCMR 5](#) requires sample collection for 30 chemical contaminants (29 PFAS and lithium) between 2023 and 2025. All PWSs serving more than 10,000 people (i.e., large systems) will monitor; all PWSs serving 3,300 to 10,000 people, and 800 representative PWSs serving fewer than 3,300 will monitor. The purpose of the UCMR is to provide EPA

and other interested parties with scientifically valid data on the national occurrence of these contaminants in drinking water.

Emerging Contaminants (EC) in Small or Disadvantaged Communities Grant (SDC)

EPA announced \$2 Billion in grants available from the Bipartisan Infrastructure Law (BIL) to States and Territories to address [Emerging Contaminants in Small or Disadvantaged Communities](#). The Massachusetts [allotment for FY2022-2023](#) will be \$38 million, and MA can expect to receive additional funding through FY 2026.

Small communities have a population of less than 10,000 individuals and are determined to not have the capacity to incur debt. Disadvantaged communities are communities that fall into one of the three tiers using the [Massachusetts Clean Water Trust's \(CWT\) annual affordability calculation](#).

Training Calendar

When you need training, please look at the training calendar located at:

<http://www.mass.gov/eea/agencies/massdep/water/drinking/drinking-water-training-class-schedules.html>.

Board of Certification Training Page and List of Approved Courses

You may also want to go to the Board of Certification of Operators of Drinking Water Supply Facilities Operators training page and view the approved education courses to sit for examination. Go to:

<https://www.mass.gov/doc/drinking-water-board-approved-education-courses-updated-september-2020/download>.

Some Newly Added Trainings on the Calendar

2023 Wellhead Protection

Tuesday, May 9, 2023; 1:00 – 2:00 p.m. ET; webinar

This class will cover source water protection for drinking water wells.

Objectives:

- Explain the purpose of the multiple barrier approach.
- Calculate the zone of influence around groundwater sources using the EPA simplified method.
- Describe activities that should be limited or prohibited within a wellhead protection area.
- Describe how contaminant plumes are formed and monitored.

[Register now](#).

Educational Series on Pipeline Inspection and Condition Assessment — Part I: Metallic Pressure Pipes for Water and Wastewater

Wednesday, May 17, 2023; 1:00 – 2:30 p.m. ET; webinar

Note: This is Part I of a two-part webinar series. If you wish to attend Part II, you must register separately. All owners of metallic pipes for pressurized water and wastewater service will receive valuable information to help them make informed decisions about managing and inspecting these buried assets. Experts will educate attendees on the theory and application of high-resolution inspection technologies. Part 1: The first session in this series will cover the application of the AWWA M77 Manual of Practice - Condition Assessment of Water Mains to metallic pressure pipes used for water and wastewater service. The panel will discuss content from the following chapters of M77 as it relates to the inspection and assessment of cast iron pipe (CIP), ductile iron pipe (DIP), and steel pipe.

Webinar fee per person: \$75 Member/\$120 Nonmember. [Register now](#).

CWSRF Funding Process Virtual Workshop Series: Economics and Affordability of Low-Interest Rate Loans

Thursday, May 18, 2023; 12:00 – 1:30 p.m. ET; webinar

Join experts from the Environmental Finance Center Network for a no-cost webinar series on the Clean Water State Revolving Fund (CWSRF). This monthly series is intended to help you better understand the CWSRF funding process.

Sessions will be held on the third Thursday every month. What types of projects are eligible for CW SRF funding? [Register now.](#)

- **MassDEP**
[Previous Cybersecurity Trainings now on YouTube:](#)
 - Basic Cybersecurity Measures for Water Utilities: <https://youtu.be/78v3eAyf1yE>
 - Ransomware Experiences, Defense, and Response: <https://youtu.be/eisIsdQnXqE>
- **Environmental Finance Center Network**
For a complete list of trainings webinars and in-person trainings please go to: <https://efcnetwork.org/upcoming-events/>
- **EPA**
For a complete list of trainings, webinars and in-person trainings, please go to: <https://www.epa.gov/dwreginfo/drinking-water-training>.
- **Mass Rural Water Association**
For a complete list of trainings, webinars and in-person trainings, please go to: <https://www.massrwa.org/p/14/Trainings—Events>.
- **MWWA**
For a complete list of trainings, webinars and in-person trainings, please go to: [MWWA Calendar](#)
- **NEWWA**
For a complete list of trainings, webinars and in-person trainings, please go to: https://communityhub.newwa.org/nc__upcomingevents.
- **Water ISAC**
For a complete list of trainings, webinars and in-person trainings, please go to: <https://www.waterisac.org/resources>.
- **RCAP Solutions**
For a complete list of trainings, webinars and in-person trainings, please go to: <http://www.rcapsolutions.org/community-resources-events/>.
- **AWWA**
For a complete list of trainings, webinars and in-person trainings, please go to: https://www.awwa.org/Events-Education/Events-Calendar?utm_term=AWWA+Connections+10-8-2021&utm_content=Connections+10-8-2021&utm_source=communications&utm_medium=email&utm_campaign=connections.

Training Refresher

If you need a refresher on recently given trainings, you can review several training videos located at:

https://www.youtube.com/playlist?list=PLJn2AKOcYr7lutGJB-UfDKtQPF_o_249m

or click here:  **YouTube**

Operators, consultants, and others who are interested in Drinking Water Program updates are encouraged to request to be subscribed to this email list. You may also request to be unsubscribed by replying to this email.

This MassDEP Program Director technical assistance email is funded by the Safe Drinking Water Act Assessment (Section 70) Program. The Assessment is paid by all consumers of public water in Massachusetts and is collected by public water systems. For more information about the Assessment Program, go <https://www.mass.gov/service-details/safe-drinking-water-act-assessment-advisory-committee-section-70-committee>.

Cybersecurity, Emergency Preparedness, and You!

2023-XX-XX

PLEASE SHARE THIS CYBERSECURITY INFORMATION WITH YOUR SCADA & INFORMATION TECHNOLOGY STAFF



Be Vigilant!



Report all incidents and anomalous activity to [CISA](#) and/or the FBI via your local [FBI field office](#) or the FBI's 24/7 CyWatch at 855-292-3937 or CyWatch@fbi.gov



Regularly review CISA'S [Shields Up](#) page.



[EPA: Water Sector Cybersecurity Evaluation and Technical Assistance Program](#)



Cybersecurity review is an important part of your sanitary surveys. Have you signed up with USEPA for a free cybersecurity assessment? See [EPA Free Cybersecurity Assessment and Technical Assistance](#)

Keep Us Informed

Have you accessed EPA, CISA or other partners' offers for free cybersecurity vulnerability assessments? If yes, please let us know at program.director-dwp@mass.gov. Subject Cyber security.

NEW Critical Infrastructure Security Updates:

Cybersecurity Advisory - APT28 Exploits Known Vulnerability to Carry Out Reconnaissance and Deploy Malware on Cisco Routers

- The UK National Cyber Security Centre (NCSC), the US National Security Agency (NSA), US Cybersecurity and Infrastructure Security Agency (CISA) and US Federal Bureau of Investigation (FBI) released a [joint advisory APT28 exploits known vulnerability to carry out reconnaissance of routers and deploy malware](#) to provide details of tactics, techniques and procedures (TTPs) associated with APT28's exploitation of Cisco routers.
- Per the [advisory](#), the previously mentioned agencies assess that APT28 is almost certainly the Russian General Staff Main Intelligence Directorate (GRU) 85th special Service Centre (GTsSS) Military Intelligence Unit 26165. APT28 is a highly skilled threat actor. Since 2021, APT28 has been observed using commercially available code repositories, and post-exploit frameworks such as Empire. This includes the use of Powershell Empire, in addition to Python versions of Empire.
- APT28 has been known to access vulnerable routers by using default and weak SNMP community strings, and by exploiting CVE-2017-6742 (Cisco Bug ID: CSCve54313) as published by Cisco and highlighted in their related blog. Threat Actors Exploiting SNMP Vulnerabilities in Cisco Routers TTPs in this advisory may still be used against vulnerable Cisco devices. Water utilities are advised to follow the mitigation advice in this advisory to defend against this activity.

Recommended Countermeasures:

- ✓ Patch devices as advised by Cisco. The NCSC also has general guidance on managing updates and keeping software up to date.
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- ✓ Do not use SNMP if you are not required to configure or manage devices remotely to prevent unauthorized users from accessing your router.
 - ✓ If you are required to manage routers remotely, establish allow and deny lists for SNMP messages to prevent unauthorized users from accessing your router.
 - ✓ Do not allow unencrypted (i.e., plaintext) management protocols, such as SNMP v2 and Telnet. Where encrypted protocols aren't possible, you should carry out any management activities from outside the organization through an encrypted virtual private network (VPN), where both ends are mutually authenticated.
 - ✓ Enforce a strong password policy. Do not reuse the same password for multiple devices. Each device should have a unique password. Where possible, avoid legacy password-based authentication and implement two-factor authentication based on public-private key.
 - ✓ Disable legacy unencrypted protocols such as Telnet and SNMP v1 or v2c. Where possible, use modern encrypted protocols such as SSH and SNMP v3. Harden the encryption protocols based on current best security practices. The NCSC strongly advises owners and operators to retire and replace legacy devices that can't be configured to use SNMP v3.
 - ✓ Use logging tools to record commands executed on your network devices, such as TACACS+ and Syslog. Use these logs to immediately highlight suspicious events and keep a record of events to support an investigation if the integrity of the device integrity is ever in question. See NCSC guidance on monitoring and logging.
 - ✓ If you suspect your router has been compromised: Follow Cisco's advice for verifying the Cisco IOS image. Revoke all keys associated with the router. When replacing the router configuration be sure to create new keys rather than pasting from the old configuration.
 - ✓ NSA's Network Infrastructure guide provides some best practices for SNMP.
 - ✓ See also the Cisco IOS hardening guide and Cisco's Jaguar Tooth blog.
- For more information read the attached [report](#) for more information.

CISA Urges Organizations to Incorporate the FCC Covered List Into Risk Management Plans

- The Federal Communications Commission (FCC) maintains a [Covered List](#) of communications equipment and services that have been determined by the U.S. government to pose an unacceptable risk to the national security of the United States or the security and safety of United States persons to national security pursuant to the Secure and Trusted Communications Networks Act of 2019.
- As National Supply Chain Integrity Month concludes, CISA urges critical infrastructure owners to incorporate the Covered List into their supply chain risk management efforts.
- CISA recommends using the Defending Against Software Supply Chain Attacks resource and enrolling in its free [Vulnerability Scanning service](#) for identifying high-risk devices.
- For more details, visit [CISA](#).

Vulnerability Awareness – Spike in Attacks against CCTV Products with Critical vulnerabilities

- Security Week has written an article discussing a spike in attacks exploiting [CVE-2018-9995](#), a 5 year old critical authentication bypass vulnerability in TBK Vision devices, and [CVE-2016-20016](#), a 7 year old vulnerability in MVPower devices.
- [Reported by Fortinet](#), both of these manufacturers produce CCTV equipment often used to protect critical infrastructure facilities, with TBK Vision claiming it's deployed "over 600,000 cameras, 50,000 CCTV recorders, and other devices being used by organizations in banking, government, retail, and other sectors."
- Members who utilize the impacted products are highly encouraged to review available reporting and address accordingly.

For more details visit [WaterISAC](#).

Upcoming Trainings



EPA Webinar: Addressing Public Water System Cybersecurity in Sanitary Surveys

Wednesday, May 24, 2023; 1:00 - 2:00 p.m. ET; webinar

EPA will be hosting a free cybersecurity webinar for public water system personnel. Participants will gain vital information about the recently released memorandum Addressing Public Water System Cybersecurity in Sanitary Surveys or an Alternate Process. [Register now](#)

Dragos Webinar: 2022 Year in Review - Lessons Learned from the Frontlines

Tuesday, May 16, 2023; 1:00 p.m. ET; webinar

Join experts from Dragos as they share insights from their experience in 2022 on the frontlines of industrial cybersecurity. The webinar will cover overall and industry-specific trends, and dive into which trends reversed from previous years; what the most consistent trend has in common with Netflix; and the impact of oil pipeline regulations on ICS/OT cybersecurity. [Register now](#)

MassDEP Cybersecurity Reminders:

- [EPA Free Cybersecurity Assessment and Technical Assistance](#)
 - [EPA Cyber Incident Reporting Factsheet](#)
 - [CISA free testing and assessment services to critical infrastructure](#)
 - [MassDEP posters with cybersecurity tips to help keep your systems secure <https://www.mass.gov/info-details/public-drinking-water-system-operations#cybersecurity>](#)
 - [Public Water Systems may include cybersecurity planning in DWSRF Asset Management Grant applications.](#)
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Supply Chain Reminders

PWSs are reminded to implement the steps identified by DWP at <https://www.mass.gov/doc/steps-to-prepare-your-public-water-system-for-supply-chain-disruptions/download> and keep MassDEP/DWP informed of all Supply Chain issues.

Resources:

- MassDEP poster on supply chain issues planning and response with steps to prepare PWS for supply chain disruptions. See/download the poster here <https://www.mass.gov/doc/steps-to-prepare-your-public-water-system-for-supply-chain-disruptions/download>
 - [EPA Chemical Supplier and Manufacturer Locator Tool](#): This tool allows water and wastewater utilities to search for suppliers and manufacturers across the U.S. that may be able to fulfill their chemical supply needs and increase resilience to supply chain disruptions. This tool can be can also be useful for finding alternative chemical suppliers in the case of supply chain shortages.
 - Join [MassWARN](#).
 - [EPA page on supply chain disruptions](#), includes information on issues impacting availability and price and also provides recommendations utilities can take to respond to shortages and position themselves for the future.
 - [Water and Wastewater Supply Chain Case Studies](#)
 - [Water Treatment Chemical Supply Chain Profiles](#)
 - [Understanding Water Treatment Chemical Supply Chains and the Risk of Disruptions](#)
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